

WHAT IS CLAIMED IS

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1. An optical scanning device comprising:
a light source;
a coupling lens coupling a beam emitted from
said light source;
a light deflector deflecting the beam from
said coupling lens at a uniform angular velocity;
a line-image imaging optical system disposed
between said coupling lens and light deflector, and
causing the beam to image a line image long along main
scanning directions on or in the vicinity of a
deflection reflective surface of said light deflector;
a scanning and imaging optical system causing
the beam deflected by said light deflector to image a
beam spot on a medium to be scanned; and
an optical housing in which said light source,
coupling lens, light deflector, line-image imaging
optical system and scanning and imaging optical system
are disposed, and contained, and
wherein a plurality of holding and fixing
datums for holding and fixing a light-source part

comprising said light source and coupling lens are provided in at least one of said light-source part and optical housing.

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2. The device as claimed in claim 1, wherein:
said light deflector is covered by a cover;
said cover has a window for the beam to be
incident on and exit from said light deflector; and
a transparent cover member can be mounted on
said window, and
wherein said holding and fixing datums are
determined so that, by selectably using said holding and
fixing datums, the beam deflected by said light
deflector passes through said scanning and imaging
optical system approximately at the same position
whether or not said transparent cover member is mounted.

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3. The device as claimed in claim 1, wherein
said light-source part and line-image imaging optical

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system are disposed on a common member.

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4. The device as claimed in claim 1, wherein said coupling lens and line-image imaging optical system are formed integrally.

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5. The device as claimed in claim 1, wherein
said light-source part comprises a plurality of light-
15 emitting sources.

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6. The device as claimed in claim 3, wherein the beam emitted from said light-source part comprises an approximately parallel beam.

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7. The device as claimed in claim 4, wherein the beam emitted from said light-source part comprises an approximately parallel beam.

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8. An optical scanning device comprising:
a light-source unit emitting a beam;

10 a first imaging optical system causing the beam emitted by said light-source unit to image at a predetermined position;

a deflector receiving the beam from said first imaging optical system and performing scanning with the
15 beam; and

a second imaging optical system causing the beam from said deflector to image a beam spot on a surface to be scanned, and

wherein:

20 said light-source unit, first imaging optical system, deflector and second imaging optical system are mounted in a box housing;

a transparent member of an approximately parallel plate is disposed detachably so as to be
25 located between said first imaging optical system and

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deflector and between said deflector and second imaging optical system; and

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a mounting position of said second imaging optical system can be changed according to whether or not said transparent member is provided.

10 9. The device as claimed in claim 8, wherein the mounting position of said second imaging optical system along main scanning directions can be changed according to whether or not said transparent member is used.

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20 10. The device as claimed in claim 8, wherein the mounting position of said second imaging optical system along directions of an optical axis thereof can be changed according to whether or not said transparent member is used.

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11. The device as claimed in claim 8, wherein
the mounting position of said second imaging optical
system along main scanning directions and directions of
an optical axis thereof can be changed according to
5 whether or not said transparent member is used.

10 12. An optical scanning device comprising:
light emitting means for emitting a beam;
coupling means for coupling the beam emitted
by said light emitting means;
light deflecting means for deflecting an
15 incident beam at a uniform angular velocity;
line-image imaging means for causing the beam
coupled by said coupling means to image a line image
long along main scanning directions on or in the
vicinity of a deflection reflective surface of said
20 light deflecting means;
scanning and imaging means for causing the
beam deflected by said light deflecting means to image a
beam spot on a medium to be scanned; and
an optical housing in which said light
25 emitting means, coupling means, light deflecting means,

line-image imaging means and scanning and imaging means are disposed, and contained, and

wherein a plurality of holding and fixing datums for holding and fixing a light-source part

5 comprising said light emitting means and coupling means are provided in at least one of said light-source part and optical housing.

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13. An optical scanning device comprising:

light-source means for emitting a beam;

first imaging means for causing the beam

15 emitted by said light-source means to image at a predetermined position;

deflecting means for receiving the beam from said first imaging means and performing scanning with the beam; and

20 second imaging means for causing the beam from said deflecting means to image a beam spot on a surface to be scanned, and

wherein:

said light-source means, first imaging means,

25 deflecting means and second imaging means are mounted in

$\frac{1}{\sqrt{\pi}} \int_{-\infty}^{\infty} f(x) e^{-x^2} dx = \frac{1}{\sqrt{\pi}} \int_{-\infty}^{\infty} f(x) e^{-x^2} dx$

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prises:

- a light source;
- a coupling lens coupling said light source;
- a light deflector deflected by said coupling lens at a uniform angular rate;
- a line-image imaging optical system between said coupling lens and light deflector, directing the beam to image a line in one or more scanning directions on or in the vertical plane of said reflection reflective surface of said scanning and imaging optical system;
- a scanning and imaging optical system directing a beam deflected by said light deflector to a spot on a medium to be scanned;
- an optical housing in which said coupling lens, light deflector, light source, scanning and imaging optical system and scanning and imaging optical system are disposed, and contained, and
- wherein a plurality of means for holding and fixing a line image are provided in at least one of said optical housing.

a coupling lens coupling a beam emitted from
t source;

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15. An image forming apparatus comprising:
an optical scanning device scanning a surface
of a photosensitive body with a beam so as to form a
latent image on said photosensitive body;
5 said photosensitive body;
a developing device developing the latent
image so as to form a visible image;
a transferring device transferring the visible
image to a sheet recording medium; and
10 a fixing device fixing the visible image onto
the sheet recording medium, and
wherein said optical scanning device
comprises:
a light-source unit emitting a beam;
15 a first imaging optical system causing the
beam emitted by said light-source unit to image at a
predetermined position;
a deflector receiving the beam from said first
imaging optical system and performing scanning with the
20 beam; and
a second imaging optical system causing the
beam from said deflector to image a beam spot on a
surface to be scanned, and
wherein:
25 said light-source unit, first imaging optical

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a mounting position of said second imaging optical system can be changed according to whether or not said transparent member is used.